IMAGING SPECIMENS

SETTING UP THE COMPUTER:

1. Sign onto the computer using your student ID and password.
2. All of the folders used for imaging can be found on the "Public" folder of the imaging computer. Navigate to **This PC > OSDisk (C:) > Specimen Images** to find these folders

SETTING UP THE CAMERA (if not already set up):

1. To Prepare the camera for use: Make sure the 55 mm lens is in place on camera. Make sure the autofocus is on. Make sure the lens cap is off. Make sure the lens cap is off. The camera should be on Manual Mode on the dial.
2. If not already in place, plug the camera into the computer using the AV out cable.
3. If not already in place, insert the battery pack and plug it in.
4. Check that the camera is firmly held in place with the foam holder and strap.

GETTING STARTED:

1) Turn on light box. Power switch is on bottom, rear corner of light box – The lights should be allowed to stabilize for at least 3 minutes before selecting/checking color balance. Check that the lens cap is off.

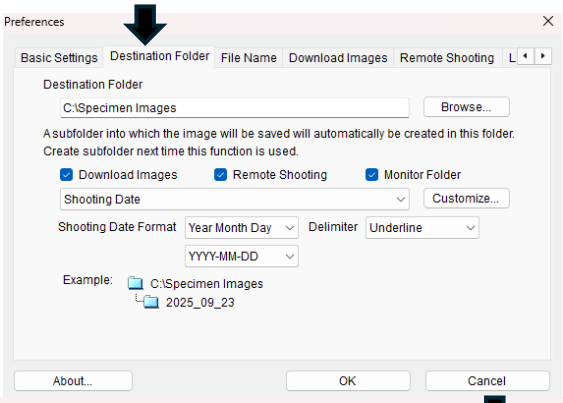
2) Turn on the camera – The camera power switch is shown in a dashed square below. If the camera is inactive for more than 15 minutes, it will auto-power down. To wake it up, either cycle the power switch to off and then back on, or press the shutter button shown circled below.

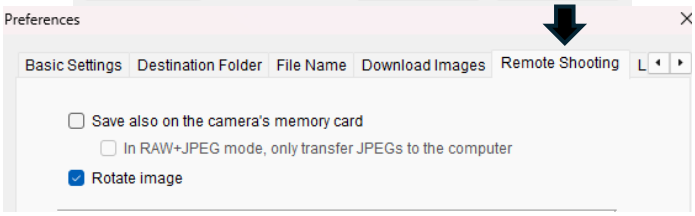
3) Double click on **EOS utility 2** icon (on the computer desktop).

4) If the camera is on and ready, the control console will open:

   a) Set or verify shutter speed, F-stop, ISO, and shooting menu settings – you can double click on each setting to change it from the desktop interface

5) Click on the small folder icon near the top of the control panel to open the settings menus. Set or check your settings match these screenshots. Then press OK to exit

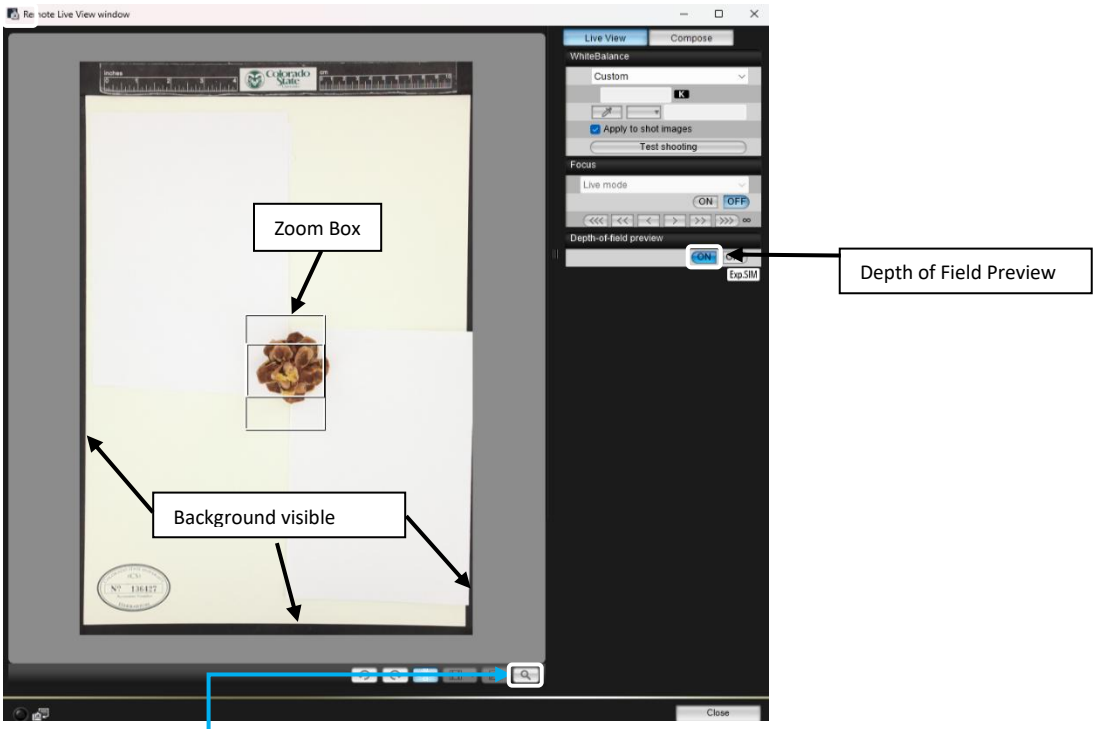




6) Click "Live View shoot" and calibrate color balance.

IMAGE CHECK AND WHITE BALANCE CALIBRATION

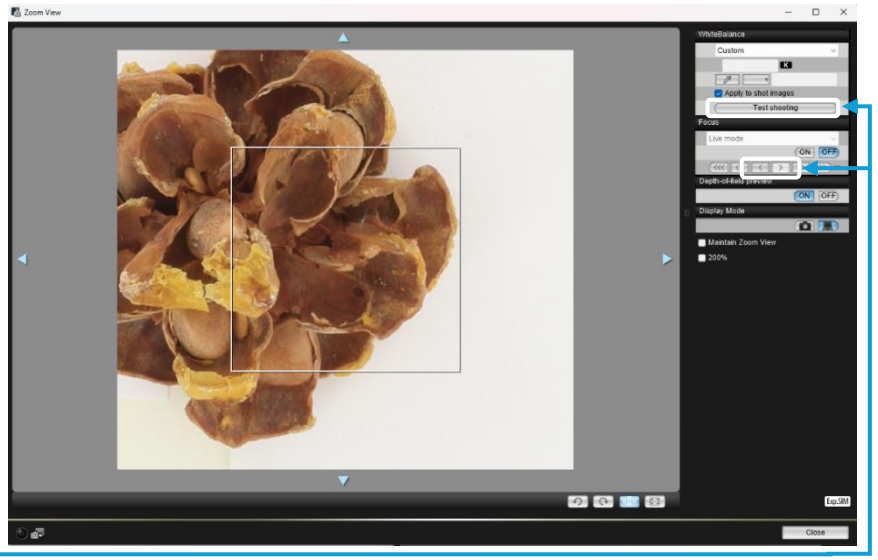
1) Place **test imaging setup** in the lightbox. The test imaging setup is kept in the top left cubby of the imaging cabinet. Open the Live View window (step 6 above). Turn on **depth-of field preview**. Verify that some of the backboard is visible around all sides of the test herbarium (some black should be visible all around the herbarium sheet). Adjust the camera mount until the specimen centered as shown below. Do not move the backboard

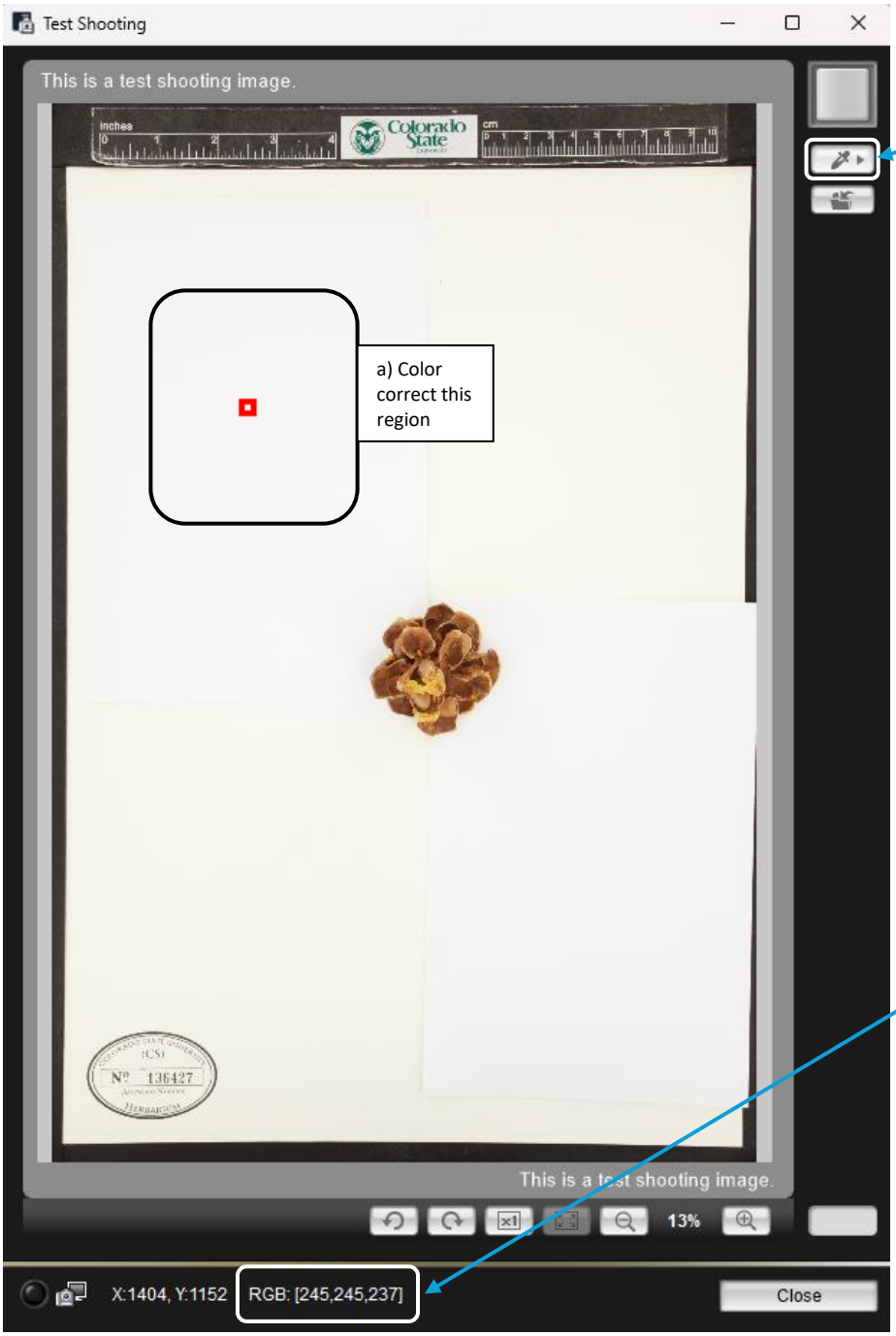


2) Move the zoom box around in this window so that it is over the detail point. Click the **magnifying glass** to the bottom right of the image in Remote Live View window to open the Zoom window.

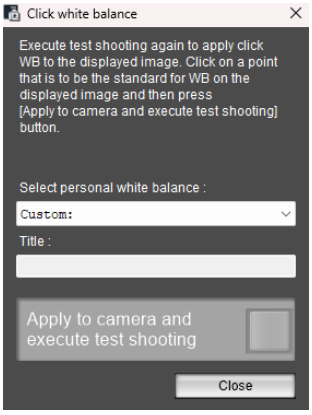
   a) Click the < and > buttons to fine-tune the focus to capture detail across the focus specimen

   b) Press Test Shooting. This will take a temporary image for color calibration purposes





3) Click on the eyedropper tool to open Click White Balance menu. This will also turn your cursor into a color-picker tool.


Click white balance
Execute test shooting again to apply click WB to the displayed image. Click on a point that is to be the standard for WB on the displayed image and then press [Apply to camera and execute test shooting] button.
Select personal white balance :
Custom:
Title :
Apply to camera and execute test shooting
Close

a) Select a region on the known white label paper in the setup, somewhere in the region shown. This should give the most accurate balance for the color of the lights.

b) Click “Apply to camera and execute test shooting”

c) Hover over the same region and verify RGB channels all are the same. (Eg. 247, 247, 247)

d) Close the test shooting window. Return to the camera control panel.

4) Click the “shoot” button on control panel to take an image of the test setup.

5) Navigate to the expected output folder ("C:\Specimen Images\YYYY_MM_DD”).

6) Check the output image orientation. If they are not vertical, click the rotate image button above and to the right of the imaging button. This rotates the output image 90 degrees for each click

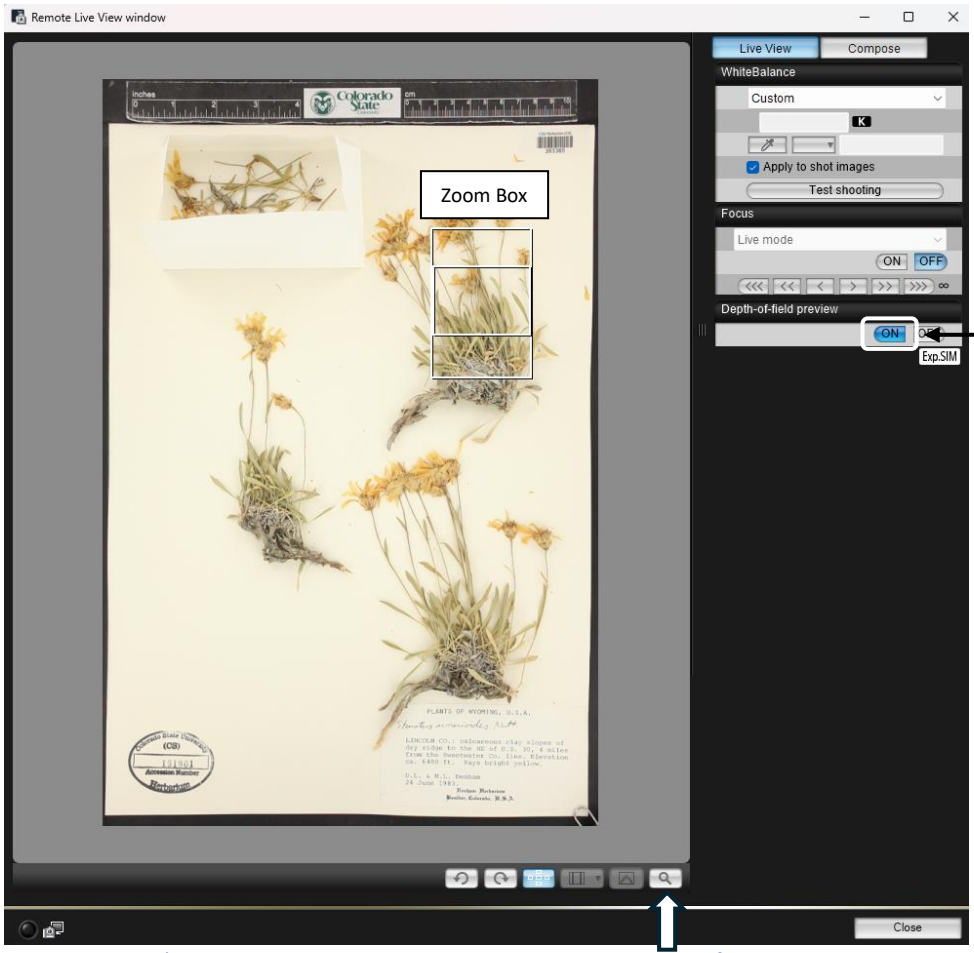
7) Double click on the storage type icon in the camera control panel and set storage type back to **RAW** (It changes during color calibration steps to RAW + JPEG)

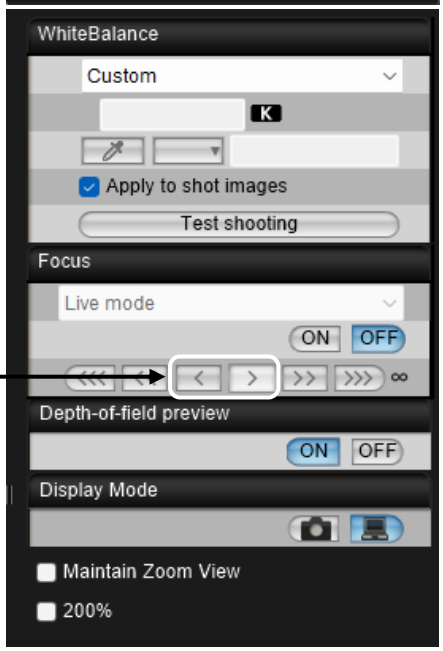
8) Delete any test images in the destination folder

9) The camera is now set up to perform imaging.

IMAGING SPECIMENS

1) Verify setup steps on previous pages are complete.
2) Insert the first specimen to be imaged into the light box. (Cabinet P5) Open and display fragment packet contents unless glued shut or if open packet obscures view of specimen, label, or barcode.
3) Close black screen curtain over front of light box
4) If not already open, open the Live View Shoot window by clicking "Live View shoot. …" button on main control panel
5) Turn on Depth-of-field preview
6) Click and drag the Zoom Box over an area of interest where you will check or verify focus.





7) Open Zoom Window by clicking on the magnifying glass icon
8) Use the small focus adjustment buttons to bring the specimen into proper focus
9) While monitoring the zoom window, press **<** until the specimen begins to blur, then press **>** to bring the zoomed portion into sharp focus. Try pressing **>** until the specimen loses focus again and then bring it back in using **<** until you get a feel for the optimum focus point.

10) Press the round camera shutter button on the main control panel to capture specimen image.
11) Imaged specimens move to P6 Filing Cabinet for future filing into the main collection. It is good practice to use a cart and the wooden boxes next to the light box to hold batches of 20 to 30 images so you don't have to access the cabinets between each shot.
12) Continue taking images in this manner, making sure to close the black curtain when taking images. Focus does not need to be adjusted for every shot, although you can bring the shot out and back into focus at any time to verify you are capturing with the sharpest focus available.
13) You can check your images by opening Digital Photo Professional and navigating to the current date's image folder in the left hand pane. Instructions for that are not part of this protocol.

COMPLETING AN IMAGING SESSION

1) Close all open imaging windows. The camera should make a noise when you exit the control panel software. This is the viewfinder mirror changing positions.
2) Remove last specimen from light box. Turn off camera and light box. See setup instructions for power switch locations.
3) Open file explorer. Navigate to This PC > C:/ > Specimen Images and add your first and last name in parentheses behind the imaging folder created for your session. Example 2025_09_23 (John Doe). Select the folder with the mouse and press F2 on keyboard to edit folder names in windows.
4) Put away specimens you imaged into the proper section of Filing Cabinet (usually will be unsorted) and return any unimaged sheets to P5 cabinet. Return imaging station to orderly condition.